



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

Department of the Army
Norfolk District, Corps of Engineers
Attn: Mr. Mark Mansfield
Chief, Planning and Policy Branch
803 Front Street
Norfolk, Virginia 23510-1096

DEC 15 2008

Re: Comment on the Draft Programmatic Environmental Impact Statement for Oyster Restoration in Chesapeake Bay Including the Use of a Native and/or Non-native Oyster (October 2008)

Dear Mr. Mansfield:

This letter is submitted on behalf of the National Oceanic and Atmospheric Administration (NOAA) in response to the above referenced Draft Programmatic Environmental Impact Statement (PEIS). NOAA is a cooperating agency for the Draft PEIS and helped the U.S. Army Corps of Engineers (COE) and the other federal and state agencies to prepare the document for public release. NOAA is also committed to assisting with preparation of the Final PEIS. As a cooperating agency, NOAA previously provided formal comments to the COE on the technical content of the Draft PEIS prior to its issuance. NOAA is now submitting its recommendation for a preferred alternative. Based on the available information, NOAA currently supports the option (Alternative 8A) which includes only native oysters (*Crassostrea virginica*).

For reasons to be explained further below, NOAA is opposed to the proposed uses of the Suminoe oyster, *Crassostrea ariakensis*, in the Chesapeake Bay. Based on the available information, NOAA currently supports the option (Alternative 8A) which includes only native oysters (*Crassostrea virginica*). This recommendation stems from findings of NOAA-sponsored research which found that cultivation of a sterile native oyster could produce a viable product for market, without succumbing to oyster diseases that have plagued native oysters in Chesapeake Bay. This recommendation is also in light of potential spread of the Suminoe oyster to other coastal ecosystems, including Delaware Bay and adjoining state coastal waters.

- **Option 8A:** As a result of research completed in support of the Draft EIS, NOAA concluded that the use of triploid native oysters in aquaculture, as well as expansion of existing restoration efforts with native oysters, is a viable alternative to the use of Suminoe oysters. Thus, we recommend this option as the Preferred Alternative.
- **Option 8B:** We recommend against this option (using triploid Suminoe oysters in aquaculture but no diploids) because it could eventually lead to reproductive populations of Suminoe oysters.
- **Option 8C:** We have concluded that introduction of diploid Suminoe oysters into Chesapeake Bay would entail unquantifiable but substantive ecological risks, and provide uncertain benefits. Because this action would be irreversible, we recommend against Option 8C.

Sincerely,

Paul N. Doremus
NOAA NEPA Coordinator



Background for NOAA's recommendation of the Preferred Alternative

Option 8A: This option would continue the use of native oysters for restoration.

Recent trials have shown that native oysters present a viable option for use in aquaculture, especially as triploids. There is a need to reform the current approaches for native oyster restoration, including a clear separation of ecological and economic goals. Examples of such new approaches include:

- Seeking improved opportunities to integrate local land-use management decision making with restoration goals for the Chesapeake watershed. The impacts of land-based management decisions are clearly having an effect on the availability of suitable habitat for oyster restoration;
- Expanding the number and geographic scope of oyster sanctuaries to more effectively protect habitat and promote the development of disease resistance in native populations; and
- Using spat-on-shell products versus cultchless oysters for native restoration projects. Research has demonstrated lower predation rates and total animal loss on restoration sites designed with spat-on-shell compared to sites created with cultchless oysters. However, cultchless oysters are appropriate for aquaculture using cages or floats, since the oysters are protected from predation, and single oysters are more desirable for the half shell market.

Option 8B: This option would use native oysters and triploid non-native oysters for aquaculture.

NOAA does not support the use of triploid Suminoe oysters included in Option 8B. The National Research Council and the Chesapeake Bay Program's Scientific and Technical Advisory Committee have both recognized that, despite having a low statistical possibility, use of triploid Suminoe oysters for in-water aquaculture presents the likelihood that such use will ultimately lead to successful establishment of Suminoe oysters within the Chesapeake Bay. Concerns with this establishment are further outlined below.

Option 8C: This option would use diploid and triploid non-native oysters.

NOAA does not support this option because the risks to the Chesapeake Bay ecosystem associated with the proposed introduction of the non-native oyster have not been demonstrated to be acceptably low, and a viable alternative exists which uses only native oysters. The main risks about which we are concerned include:

- The risk that Suminoe oysters may act as a disease vector for diseases that affect the native oyster, and also that Suminoe oysters may be adversely affected by a disease that does not affect native oysters, *Bonamia*.
- The risk that Suminoe oysters may compete with native oysters for fertilization, space and/or food, in ways that reduce the overall ecological and/or economic benefits of the combined populations of oysters. The Ecological Risk Assessment done as part of the PEIS concluded that this risk was moderate to high, with its outcome uncertain.
- The risk that Suminoe oyster larvae will spread to nearby estuaries that have healthier native oyster populations, especially to Delaware and New Jersey, and compete with those native oysters in ways that are harmful to them.
- The risk that Suminoe oysters could become a nuisance species, which has occurred elsewhere with a related introduced species. The Japanese oyster *C. gigas* has been used for aquaculture in northern Europe for 20-40 years, and only recently became a nuisance in the Wadden Sea in the Netherlands by smothering commercially important mussel beds.

For any alternatives that include use of a fertile (diploid) Suminoe oyster, there is a large degree of uncertainty with both the demographic model used and with the ecological impact projections made in the risk assessments conducted. NOAA-funded research has also shown that there is uncertainty about the potential benefits of an introduction of diploid Suminoe oysters. For example, the distribution of the Suminoe oyster in its native range in China is very patchy, so if it becomes established here, it may not meet the proposed ecological restoration goals in Chesapeake Bay.

Policy Considerations

NOAA is committed to protection of the coastal and marine environment in the Chesapeake Bay; to sustainable management of native species and habitats in the Chesapeake Bay; to restoration of native species and habitats when feasible; and to maintaining economic viability of the native fisheries in the Chesapeake Bay. There are a variety of federal authorities under which NOAA has federal jurisdiction and responsibility for managing coastal and marine resources, including provisions of the Magnuson Stevens Act, Endangered Species Act, Clean Water Act, Coastal Zone Management Act, Fish and Wildlife Coordination Act, the federal Executive Order on Invasive Species, and the native species protection purpose of the National Estuarine Research Reserve System.

On behalf of the federal government, the U.S. Environmental Protection Agency (EPA) Administrator signed the “1993 Policy on the Introduction of Non-Indigenous Aquatic Species” which was adopted by the Chesapeake Executive Council that year. By adopting that policy, the signatories (including Maryland, Virginia, and various federal agencies) agreed to oppose introduction of any non-native species into the Chesapeake Bay, unless and until sufficient studies have been conducted and evaluated to ensure that the risks associated with the proposed introduction are acceptably low. NOAA believes the risks from the proposed introduction of Suminoe oysters have not been demonstrated to be acceptably low.

Future steps in the process

NOAA envisions that future federal consultations will probably be required after a Record of Decision has been issued. The Final PEIS should identify the jurisdiction of, the timing for, and how such requirements will occur, so the public is aware what future regulatory approvals are necessary, what the process will be, and what information will be needed to accomplish the review and approval(s).

NOAA also suggests the Final PEIS should include recommendations to address the following concerns:

- Silt and sediment have buried historical oyster bars, especially with sources from major storm events in the last 36 years (i.e. hurricanes and flood events). Over the last 25 years in Maryland, oyster bar habitat (hard bottom) has decreased from 200,000 acres to just 36,000 acres. Without sufficient further protection from sedimentation, neither native nor non-native restoration efforts will be successful;
- Clarification is needed regarding the scale intended for restoration success. Large-scale oyster restoration in the Chesapeake Bay is contingent on large quantities of oysters used exclusively for

ecological restoration; including larvae production in hatcheries; sufficient substrate appropriate for setting; and adequate infrastructure to move and place seed oysters in the Bay;

- Disease resistance will only develop if there is a sufficient population of older oysters that develop such resistance over time, remain viable, and succeed in producing successive generations of resistant strains; and
- Placement of oysters on the bottom for natural grow-out requires up-to-date and accurate information on bottom conditions, including substrate type and condition, as well as circulation and currents (for larval transport). The COE should require this information for use in considering whether to approve any proposed future on-bottom aquaculture or oyster restoration activities.

Conclusions

NOAA supports continuing native oyster restoration in Chesapeake Bay under Option 8A, including the continued use of native triploid oysters for aquaculture, consistent with the policies and modifications to such efforts discussed above. NOAA does not support the continued use of triploid Suminoe oysters, due to the existence of a viable alternative (growing native triploids in aquaculture), uncertainty about their potential benefits, and the high risk that continued use of triploid Suminoe oysters will eventually lead to an introduction of diploids. NOAA does not support any introduction of diploid Suminoe oysters, due to the existence of a viable alternative, and to the potentially large and unpredictable risks involved, and uncertain benefits.